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Hiroshi HARA*: **Ludwigia versus Jussiaea.**

原 寛*: チョウジタデ属とミズキンバイ属

Jussiaea L. and *Ludwigia* L. which have their center in America, have been generally treated as separate genera distinguished by the characters that the former has 4-6 petals, stamens twice as many as petals, and elongated capsules, while the latter has petals 4-5 or none, 4-5 stamens, and relatively short capsules. This view is accepted by most of the European and American botanists, and in 1942 & 1944 Munz followed this usage in his monographic works on American species. However, a few botanists, for example Léveillé (1912) (1916) and Gagnepain dealing with Asiatic materials, concluded that they are congeneric and adopted *Jussiaea* for the combined genus. Merrill also suggested that it had good reason to unite them. After studying East Asiatic species of this group, I agreed in 1941 with the latter opinion uniting the two genera. Recently (1953) Brenan reached the same conclusion in his paper on tropical African species. Anyone who will compare *Ludwigia prostrata* Roxb. with *Jussiaea linifolia* Vahl will be surprised by their similarity not only in general appearance but also in structures of flowers, capsules and seeds. The shape of capsules is quite the same in both plants, and in the lower part of the capsule, seeds of *J. linifolia* are arranged uniseriate enclosed in a spongy endocarp just as those of *L. prostrata*. A certain species of *Jussiaea* seems to be much more closely allied to some of *Ludwigia* rather than other species of *Jussiaea*. To separate *Ludwigia* from *Jussiaea* only by the number of stamens is too artificial. The number of stamens, I think, is of secondary importance, and the affinity between species should be reexamined considering other characters as a whole. *Isnardia* L. which is retained as an independent genus by some

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botanists must be united too. *Isnardia palustris* L. of Europe is allied to *Ludwigia ovalis* Miq. of East Asia. The view uniting *Jussiaea*, *Ludwigia* and *Isnardia* into one genus, somewhat resembles the cases of *Hedyotis* of Rubiaceae and *Lindernia* of Scrophulariaceae which are recently used in a wide sense.

There are some troubles in the nomenclature of this combined genus, because *Jussiaea*, *Ludwigia* and *Isnardia* were all published by Linnaeus in his Species Plantarum ed. 1 (1753). *Isnardia* was reduced to *Ludwigia* by Elliott in 1821. Although Léveillé and Gagnepain adopted *Jussiaea* as the combined generic name, the first author who decidedly united *Jussiaea*, *Ludwigia*, and *Isnardia* the appears to be Baillon (Hist. Pl. **6**: 463, 1877) who used *Ludwigia* as the combined name, and Greene (1891) and Gomez (1894) followed this opinion. So under the present Code of Botanical Nomenclature, *Ludwigia* first chosen by Baillon must be retained for the combined generic name. Some botanists may consider to conserve *Jussiaea* against *Ludwigia*. *Ludwigia* in a narrow sense includes about 36 valid species, and *Jussiaea* about 42 species. And even if *Jussiaea* is conserved, about 25 new specific transfers from *Ludwigia* including 4 new names would be necessitated. *Jussiaea* includes such a well known species as *J. repens* L., but it cannot be called economically important, and *Ludwigia* also includes a widespread and variable species as *L. palustris* (L.) Ell. The name *Ludwigia* as well as *Jussiaea* has been used generally in such standard works as Endlich., Gen. **2** (1840); Benth. & Hook., Gen. Pl. **3** (1867), Engl. & Prantl., Nat. Pfl.-fam. **3** (7) (1893), and Dalla Torre & Harms, Gen. Siphon. (1903), and is familiar with us in many floristic works of America and Asia. Only to avoid 10 more transfers is not considered to be a sufficient reason for conserving *Jussiaea* against Article 87. So taking these facts into consideration, I decided to retain *Ludwigia* as the combined generic name strictly following the Code. Consequently at least the following transfers from *Jussiaea* seem to be necessary.

Ludwigia L., Sp. Pl. ed. 1, **1**: 118 (1753), ut *Ludvigia*; Gen. Pl. ed. 5, 55 (1754)—Baillon, Hist. Pl. **6**: 462 (1877).

Jussiaea L., Sp. Pl. ed. 1, **1**: 388 (1753); Gen. Pl. ed. 5, 183 (1754).

Isnardia L., Sp. Pl. ed. 1, **1**: 120 (1753); Gen. Pl. ed. 5, 56 (1754).

Sect. **Oligospermum** (Micheli) Hara, comb. nov.

Jussiaea sect. *Oligospermum* Micheli in Martius, Fl. Brasil. **13**-2: 149 & 162 (1875).

Sect. **Macrocarpon** (Micheli) Hara, comb. nov.

Juss. sect. *Macrocarpon* Micheli, l. c. 149 & 169 (1875).

Sect. **Nematopyxis** (Miq.) Hara, comb. nov.

Juss. sect. *Nematopyxis* (Miq.) Hara in Journ. Jap. Bot **17**: 342 (1941).

Sect. **Myrtocarpus** (Munz) Hara, comb. nov.

Juss. sect. *Myrtocarpus* Munz in Darwiniana **4**: 184 (1942).

Ludwigia adscendens (L.) Hara, comb. nov.

Jussiaea repens L., Sp. Pl. ed. 1, **1**: 388 (1753); non *Ludwigia repens* Swartz 1788.

Juss. adscendens L., Mant. **1**: 69 (1767).

var. **diffusa** (Forsk.) Hara, comb. nov.

Juss. diffusa Forsk., Fl. Aegypt.-Arab. 210 (1775).

var. **glabrescens** (O. Kuntze) Hara, comb. nov.

Juss. repens var. *glabrescens* O. Kuntze, Rev. Gen. Pl. **1**: 251 (1891).

var. **montevidensis** (Spreng.) Hara, comb. nov.

Juss. montevidensis Sprengel, Syst. **2**: 232 (1825).

var. **peploides** (H. B. K.) Hara, comb. nov.

Juss. peploides H. B. K., Nov. Gen. Sp. **6**: 97 (1823).

var. **stipulacea** (Ohwi) Hara, comb. nov.

Juss. stipulacea Ohwi in Journ. Jap. Bot. **26**: 232 (1951).

Ludwigia affinis (DC.) Hara, comb. nov.

Juss. affinis DC., Prodr. **3**: 53 (1828).

Ludwigia africana (Brenan) Hara, comb. nov.

Juss. africana Brenan in Kew Bull. 1953, 171.

Ludwigia anastomosans (DC.) Hara, comb. nov.

Juss. anastomosans DC., Prodr. **3**: 56 (1828).

Ludwigia bonariensis (Micheli) Hara, comb. nov.

Juss. bonariensis Micheli in Flora **57**: 303 (1874).

Ludwigia brachyphylla (Micheli) Hara, comb. nov.

Juss. brachyphylla Micheli in Flora **57**: 300 (1874).

Ludwigia Brenanii Hara, nom. nov.

Juss. gracilis Brenan in Kew Bull. 1953, 170; non *Ludwigia gracilis* Miq. 1855.

Ludwigia bullata (Hassl.) Hara, comb. nov.

Juss. bullata Hassler in Fedde, Rep. **12**: 39 (1913).

Ludwigia Burchellii (Micheli) Hara, comb. nov.

Juss. Burchellii Micheli in Flora **57**: 301 (1874).

Ludwigia caparosa (Camb.) Hara, comb. nov.

Juss. caparosa Camb. in St. Hilaire, Fl. Brasil. Merid. **2**: 258 (1829).

Ludwigia densiflora (Micheli) Hara, comb. nov.

Juss. densiflora Micheli in Flora **57**: 301 (1874).

Ludwigia didymosperma (P. de la Bâth.) Hara, comb. nov.

Juss. linearis Willd., Sp. Pl. **2** (1): 575 (1799); non *Ludw. linearis* Walter 1788.

Juss. didymosperma Perrier de la Bâthie in Not. Syst. **13**: 148 (1947).

Ludwigia elegans (Camb.) Hara, comb. nov.

Juss. elegans Camb. in St. Hil. l. c. 257 (1829).

Ludwigia erecta (L.) Hara, comb. nov.

Juss. erecta L., Sp. Pl. ed 1, **1**: 388 (1753).

Ludwigia foliobracteolata (Munz) Hara, comb. nov.

Juss. foliobracteolata Munz in Darwiniana **4**: 228 (1942).

Ludwigia Greatrexii (Hara) Hara in Journ. Jap. Bot. **17**: 342 (1941), pro syn.

Juss. Greatrexii Hara, l. c. (1941).

Ludwigia helminthorrhiza (Martius) Hara, comb. nov.

Juss. natans Humb. et Bonpl., Pl. Aequin. **1**: 16 (1808); non *Ludw. natans* Elliot 1821.

Juss. helminthorrhiza Martius in Flora **22**, Beibl. 1, 61 (1839).

Ludwigia Hookeri (Micheli) Hara, comb. nov.

Juss. Hookeri Micheli in Flora **57**: 302 (1874).

Ludwigia lagunae (Morong) Hara, comb. nov.

Juss. lagunae Morong in Ann. New York Acad. Sci. **7**: 111 (1893).

Ludwigia Laruotteana (Camb.) Hara, comb. nov.

Juss. Laruotteana Camb. in St. Hil. l. c. 256 (1829).

Ludwigia latifolia (Benth.) Hara, comb. nov.

Juss. latifolia Bentham in Hooker, Journ. Bot. **2**: 317 (1840).

Ludwigia leptocarpa (Nutt.) Hara, comb. nov.

Juss. leptocarpa Nuttall, Gen. N. Amer. **1**: 279 (1818).

Ludwigia lithospermifolia (Kunth) Hara, comb. nov.

Juss. lithospermifolia Kunth ex Micheli in Flora **57**: 300 (1874).

Ludwigia longifolia (DC.) Hara, comb. nov.

Juss. longifolia DC. in Mém. Soc. Phys. Genèv. ser. 2, **2**: 141 (1824).

Ludwigia Mexiae (Munz) Hara, comb. nov.

Juss. Mexiae Munz in Darwiniana **4**: 221 (1942).

Ludwigia micrantha (Kunze) Hara, comb. nov.

Juss. linifolia Vahl, Eclog. Amer. **2**: 32 (1798); non *Ludw. linifolia* Poiret 1813.

Juss. micrantha Kunze in Linnaea **24**: 177 (1851).

Ludwigia myrtifolia (Camb.) Hara, comb. nov.

Juss. myrtifolia Camb. in St. Hil. l. c. 260 (1829).

Ludwigia neograndiflora (Munz) Hara, comb. nov.

Juss. neograndiflora Munz in Darwiniana **4**: 244 (1942).

Ludwigia nervosa (Poir.) Hara, comb. nov.

Juss. nervosa Poiret in Lamarck, Encycl. Méth. Suppl. **3**: 199 (1813).

Ludwigia peruviana (L.) Hara, comb. nov.

Juss. peruviana L., Sp. Pl. ed. 1, **1**: 388 (1753).

Ludwigia Potamogeton (Burch.) Hara, comb. nov.

Juss. Potamogeton Burcheli ex Micheli in Flora **57**: 301 (1874).

Ludwigia pubescens (L.) Hara, comb. nov.

Juss. pubescens L., Sp. Pl. ed. 2, 555 (1762).

Juss. octofila DC., Prodr. **3**: 57 (1828).

var. **ligustrifolia** (H. B. K.) Hara, comb. nov.

Oenothera octovalvis L., Sp. Pl. ed. 2, 492 (1762).

Juss. angustifolia Lamarck, Encycl. Méth. **3**: 331 (1789).

Juss. ligustrifolia H. B. K., Nov. Gen. Sp. **6**: 100 (1823).

var. **sessiliflora** (Micheli) Hara, comb. nov.

Juss. octonervia var. *sessiliflora* Micheli in Martius, Fl. Brasil. **13** (2): 180 (1875).

var. **macropoda** (Presl) Hara, comb. nov.

Juss. macropoda Presl, Rel. Haenk. **2**: 35 (1835).

var. **villosa** (Lam.) Hara, comb. nov.

Juss. suffruticosa L., Sp. Pl. ed. 1, **1**: 388 (1753); non *Ludwigia suffruticosa* Walter 1788.

Juss. villosa Lamarck, Encycl. Méth. **3**: 331 (1789).

var. **brevisepala** (Brenan) Hara, comb. nov.

Juss. suffruticosa var. *brevisepala* Brenan in Kew Bull. 1953, 168 (1953).

var. **piloso-linearis** (Brenan) Hara, comb. nov.

Juss. suffruticosa var. *piloso-linearis* Brenan, l. c. 169 (1953).

Ludwigia quadrangularis (Micheli) Hara, comb. nov.

Juss. quadrangularis Micheli in Flora **57**: 302 (1874).

Ludwigia sedioides (Humb. et Bonpl.) Hara, comb. nov.

Juss. sedioides Humb. et Bonpl., Pl. Aequin. **1**: 13 (1808).

Ludwigia sericea (Camb.) Hara, comb. nov.

Juss. sericea Camb. in St. Hil. l. c. 260 (1829).

Ludwigia stenorraphe (Brenan) Hara, comb. nov.

Juss. stenorraphe Brenan in Kew Bull. 1953, 164.

Ludwigia tomentosa (Camb.) Hara, comb. nov.

Juss. tomentosa Camb. in St. Hil., l. c. 254 (1829).

Ludwigia torulosa (Arnott) Hara, comb. nov.

Juss. torulosa Arnott in Ann. Sci. Nat. ser. 2, **3**: 251 (1835).

Ludwigia uruguayensis (Camb.) Hara, comb. nov.

Juss. uruguayensis Camb. in St. Hil., l. c. 264 (1829).

既に本誌 **17**: 346 (1941) でふれておいた様に，チョウジタデ属 (*Ludwigia* L.) とミズキンバイ属 (*Jussiaea*) とは雄蕊の数以外にははつきりした区別点がない。反つて他の性質では極めて近緣と思われる種が別属に入る場合もあり不都合なので，ここに正式に両属を合一する。最近アフリカの種を検討した Brenan (1953) も同一結論に達した。両属は共にリンネが同時に記載した名なので，現行国際命名法により，この両属を最初に合一した Baillon (1877) に従つて **Ludwigia** の属名を採用する。我国に関係のある種はチョウジタデ *Ludwigia prostrata* Roxb.，ウスゲチョウジタデ *L. Greatrexii* Hara，コバノタゴボウ *L. perennis* L.，タゴボウモドキ *L. micrantha* (Kunze) Hara，キダチキンバイ *L. pubescens* (L.) Hara var. *villosa* (Lam.) Hara，ミズユキノシタ *L. ovalis* Miq.，ミズキンバイ *L. adscendens* (L.) Hara var. *stipulacea* (Ohwi) Hara である。

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宮部先生の伝記で，先生の留学の前までは自叙伝であり，以後は先生が亡くなられてからの補遺で伊藤誠哉，館脇操両博士に負う所が大きい。